Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of claims:

Claim 1 (currently amended): An apparatus for monitoring layer depositions in a process chamber, comprising:

a light source;

a disk-shaped sensor element subjectable to deposition and growth of a deposition layer;

a light detector disposed outside the process chamber;

said sensor element having a first surface on one side of said sensor element, a second surface on an opposite side of said sensor element, and a region extending from said first surface to said second surface, said region being configured for light to pass through and to absorb light to a significantly lesser extent than a remaining part of said sensor element, an intensity of the light being measured in dependence on said region being grown over by a thickness of the deposition layer, the intensity of the light from said light source being measured through a window formed in the process chamber.

Claim 2 (original): The apparatus according to claim 1, wherein said region is a continuous opening formed in said sensor element.

Claim 3 (previously presented): The apparatus according to claim 1, wherein said region is configured to influence the intensity of a light beam measured by said detector as the thickness of the layer grows on said sensor element.

Claim 4 (cancelled).

Claim 5 (original): The apparatus according to claim 1, wherein said light source is a separate light source generating a light beam.

Claim 6 (currently amended): ~~The apparatus according to claim 5, wherein~~ An apparatus for monitoring layer depositions in a process chamber, comprising:

a light source being a separate light source generating a light beam;

a disk-shaped sensor element subjectable to deposition and growth of a deposition layer;

a light detector;

said sensor element having a first surface on one side of said sensor element, a second surface on an opposite side of said sensor element, and a region extending from said first surface to said second surface, said region being configured for light to pass through and to absorb light to a significantly lesser extent than a remaining part of said sensor element, an intensity of the light being measured in dependence on said region being grown over by a thickness of the deposition layer, said light source ~~is~~ being disposed in front of a window formed in the process chamber in a line with said sensor element and said detector.

Claim 7 (original): The apparatus according to claim 1, wherein said light source is a plasma luminous phenomenon in the process chamber.

Claim 8 (currently amended): ~~The apparatus according to claim 1, which further comprises~~ An apparatus for monitoring layer depositions in a process chamber, comprising:

a light source;

a disk-shaped sensor element subjectable to deposition and growth of a deposition layer;

a light detector;

said sensor element having a first surface on one side of said sensor element, a second surface on an opposite side of said sensor element, and a region extending from said first surface to said second surface, said region being configured for light to pass through and to absorb light to a significantly lesser extent than a remaining part of said sensor element, an intensity of the light being measured in dependence on said region being grown over by a thickness of the deposition layer; and

a tilting/rotating mechanism enabling said sensor element to be tilted/rotated out of a beam path of the light.

Claim 9 (original): The apparatus according to claim 8, wherein said mechanism is enabled to tilt/rotate said sensor element out of a light path from a plasma luminous phenomenon defining said light source to said detector.

Claim 10 (currently amended): ~~The apparatus according to claim 5, which further comprises~~ An apparatus for monitoring layer depositions in a process chamber, comprising:

a light source being a separate light source generating a light beam;

a disk-shaped sensor element subjectable to deposition and growth of a deposition layer;

a light detector;

said sensor element having a first surface on one side of said sensor element, a second surface on an opposite side of said sensor element, and a region extending from said first surface to said second surface, said region being configured for light to pass through and to absorb light to a significantly lesser extent than a remaining part of said sensor element, an intensity of the light being measured in dependence on said region being grown over by a thickness of the deposition layer; and

a tilting/rotating mechanism enabling said sensor element to be tilted/rotated out of a beam path of said light beam from said light source to said detector.

Claim 11 (original): The apparatus according to claim 1, which comprises further detector for measuring the intensity of the light from said light source not influenced by said sensor element.

Claim 12 (original): The apparatus according to claim 1, wherein said region is formed with a spatial extent in a same order of magnitude as a maximum layer thickness to be determined with the apparatus.

Claim 13 (original): The apparatus according to claim 2, wherein said opening is formed with a spatial extent in a same order of magnitude as a maximum layer thickness to be determined with the apparatus.

Claim 14 (currently amended): ~~The apparatus according to claim 1, wherein~~ An apparatus for monitoring layer depositions in a process chamber, comprising:

a light source;

a disk-shaped sensor element subjectable to deposition and growth of a deposition layer;

a light detector;

said sensor element having a first surface on one side of said sensor element, a second surface on an opposite side of said sensor element, and a region extending from said first surface to said second surface, said region being configured for light to pass through and to absorb light to a significantly lesser extent than a remaining part of said sensor element, an intensity of the light being measured in dependence on said region being grown over by a thickness of the deposition layer; and

~~a diameter of~~ said region ~~varies~~ having a varying diameter.

Claim 15 (currently amended): ~~The apparatus according to claim 2, wherein said sensor element is a disk-type sensor with a first and a second surface,~~ An apparatus for monitoring layer depositions in a process chamber, comprising:

a light source;

a disk-shaped sensor element subjectable to deposition and growth of a deposition layer;

a light detector;

said sensor element having a first surface on one side of said sensor element, a second surface on an opposite side of said sensor element, and a region extending from said first surface to said second surface, said region being configured for light to pass through and to absorb light to a significantly lesser extent than a remaining part of said sensor element, an intensity of the light being measured in dependence on said region being grown over by a thickness of the deposition layer; and

said region being a continuous opening formed in said sensor element, said opening ~~extends~~ extending from said first surface to said second surface and ~~a diameter of~~ said opening ~~varies~~ having a varying diameter.

Claim 16 (currently amended): The apparatus according to claim 1, wherein said sensor element is provided with a cooling device for cooling said sensor element.

Claim 17 (currently amended): The apparatus according to claim 1, wherein said sensor element is provided with a heating device for heating said sensor element.

Claim 18 (original): The apparatus according to claim 1, wherein said sensor element is one of at least two sensor elements and said light detector is one of at least two light detectors respectively associated with said sensor elements and configured to generate a measurement signal representing the intensity of the light transmitted by said sensors, and wherein an evaluation device is connected to said sensor elements for processing the measurement signals in dependence on one another.

Claim 19 (original): In combination with a process chamber for depositing or removing layers, the apparatus according to claim 1 adapted and disposed to monitor a growth or a removal of the layers in the process chamber.

Claim 20 (original): A monitoring method, which comprises providing an apparatus according to claim 1, monitoring a layer deposition in a process chamber with the apparatus, determining a cleaning cycle time of the process chamber from an intensity measurement of the light by comparing the

measured light intensity with one of a predetermined minimum intensity and a predetermined maximum intensity.

Claim 21 (new): The apparatus according to claim 6, wherein said region is a continuous opening formed in said sensor element.

Claim 22 (new): The apparatus according to claim 6, wherein said region is configured to influence the intensity of a light beam measured by said detector as the thickness of the layer grows on said sensor element.

Claim 23 (new): The apparatus according to claim 6, wherein said light source is a plasma luminous phenomenon in the process chamber.

Claim 24 (new): The apparatus according to claim 6, wherein said region has a varying diameter.

Claim 25 (new): The apparatus according to claim 21, wherein said opening extends from said first surface to said second surface and said opening has a varying diameter.

Claim 26 (new): The apparatus according to claim 6, wherein said sensor element is one of at least two sensor elements and

said light detector is one of at least two light detectors respectively associated with said sensor elements and configured to generate a measurement signal representing the intensity of the light transmitted by said sensors, and an evaluation device is connected to said sensor elements for processing the measurement signals in dependence on one another.

Claim 27 (new): The apparatus according to claim 8, wherein said region is a continuous opening formed in said sensor element.

Claim 28 (new): The apparatus according to claim 8, wherein said region is configured to influence the intensity of a light beam measured by said detector as the thickness of the layer grows on said sensor element.

Claim 29 (new): The apparatus according to claim 8, wherein said light source is a separate light source generating a light beam.

Claim 30 (new): The apparatus according to claim 8, wherein said light source is a plasma luminous phenomenon in the process chamber.

Claim 31 (new): The apparatus according to claim 8, wherein said region has a varying diameter.

Claim 32 (new): The apparatus according to claim 27, wherein said opening extends from said first surface to said second surface and said opening has a varying diameter.

Claim 33 (new): The apparatus according to claim 8, wherein said sensor element is one of at least two sensor elements and said light detector is one of at least two light detectors respectively associated with said sensor elements and configured to generate a measurement signal representing the intensity of the light transmitted by said sensors, and an evaluation device is connected to said sensor elements for processing the measurement signals in dependence on one another.

Claim 34 (new): The apparatus according to claim 10, wherein said region is a continuous opening formed in said sensor element.

Claim 35 (new): The apparatus according to claim 10, wherein said region is configured to influence the intensity of a light beam measured by said detector as the thickness of the layer grows on said sensor element.

Claim 36 (new): The apparatus according to claim 10, wherein said light source is a plasma luminous phenomenon in the process chamber.

Claim 37 (new): The apparatus according to claim 10, wherein said region has a varying diameter.

Claim 38 (new): The apparatus according to claim 34, wherein said opening extends from said first surface to said second surface and said opening has a varying diameter.

Claim 39 (new): The apparatus according to claim 10, wherein said sensor element is one of at least two sensor elements and said light detector is one of at least two light detectors respectively associated with said sensor elements and configured to generate a measurement signal representing the intensity of the light transmitted by said sensors, and an evaluation device is connected to said sensor elements for processing the measurement signals in dependence on one another.

Claim 40 (new): The apparatus according to claim 14, wherein said region is a continuous opening formed in said sensor element.

Claim 41 (new): The apparatus according to claim 14, wherein said region is configured to influence the intensity of a light beam measured by said detector as the thickness of the layer grows on said sensor element.

Claim 42 (new): The apparatus according to claim 14, wherein said light source is a separate light source generating a light beam.

Claim 42 (new): The apparatus according to claim 14, wherein said light source is a plasma luminous phenomenon in the process chamber.

Claim 43 (new): The apparatus according to claim 40, wherein said opening extends from said first surface to said second surface.

Claim 44 (new): The apparatus according to claim 14, wherein said sensor element is one of at least two sensor elements and said light detector is one of at least two light detectors respectively associated with said sensor elements and configured to generate a measurement signal representing the intensity of the light transmitted by said sensors, and an evaluation device is connected to said sensor elements for

processing the measurement signals in dependence on one another.

Claim 45 (new): The apparatus according to claim 15, wherein said region is configured to influence the intensity of a light beam measured by said detector as the thickness of the layer grows on said sensor element.

Claim 46 (new): The apparatus according to claim 15, wherein said light source is a separate light source generating a light beam.

Claim 47 (new): The apparatus according to claim 15, wherein said light source is a plasma luminous phenomenon in the process chamber.

Claim 48 (new): The apparatus according to claim 15, wherein said sensor element is one of at least two sensor elements and said light detector is one of at least two light detectors respectively associated with said sensor elements and configured to generate a measurement signal representing the intensity of the light transmitted by said sensors, and an evaluation device is connected to said sensor elements for processing the measurement signals in dependence on one another.